



Building Construction for the Fire Service

Title: Master Syllabus

Date: August, 2017

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| Course Title | Building Construction for the Fire Service |
| Course Number | FFP2120, BFST2120, and ATPC2120 |
| Prerequisite(s) | None |
| Revision Date | August, 2017 |
| College Credit Recommendation/Contact Hours | This course has a college recommendation of 3 credits....45 hours |
| Continuing Education Units (CEU's) | 45 hours towards Fire Safety Inspector renewal. |
| Class Days/Time | If on the Fire College Campus - 8:00am to 5:00pm with 5 additional hours of out of class work may be required. |
| Instructional Supervisor | Name: Francis J. Ennist Email: frank.ennist@myfloridacfo.com |
| Program Manager | |
| Course Description | This course will cover various topics including: identifying hazards from assault by fire and gravity; how building construction can influence fire spread, fire confinement or structural collapse; and other life safety issues. This course identifies construction features and their hazards under fire conditions. |
| Instructor Qualifications | (2)(a)3. Instructor Qualifications. An instructor providing training under this paragraph (a), must be qualified by the Bureau of Fire Standards and Training within the Division. Qualified instructors are: a. Instructors with requisite faculty credentials for the academic institution that is registered in the Florida Department of Education Statewide Course Numbering System to teach the course, or b. Instructors with requisite faculty credentials as determined by the United States Fire Administration – National Fire Academy, or c. Instructors with requisite faculty credentials as determined by the respective regionally accredited or nationally accredited university or college, or d. Instructors who hold an active Single Course Exemption Certification issued by the Division as outlined in subsection 69A-37.059(4), F.A.C., or e. Instructors who hold an active Fire Officer II Certification |

issued by the Division after November 18, 2013, and an active Instructor II Certification issued by the Division.

f. Instructors who hold an active Firesafety Inspector I, Firesafety Inspector II, or Fire Code Administrator Certification issued by the Division and an active Instructor II Certification issued by the Division may teach the course “Building Construction for the Fire Service.”

OR

69A-37.065(3)

Firesafety Inspector I -

- (a) Instructor Qualification: An Instructor I must hold certification as a Firesafety Inspector I.
- (b) Instructor II or III may teach Provided he or she has successfully completed the course.

Firesafety Inspector II

- (a) Instructor must hold a certificate of competency as a Fire Safety Inspector II

Instructor II or III may teach provided he or she has successfully completed the course.

OR

(4)(b) 3. Instructor Qualifications. An instructor providing training under this paragraph (4)(b), must be qualified and approved by the Bureau of Fire Standards and Training for each course. All instructors shall submit an Instructor Approval Request Form, DFS-K4-2168, at the following link:

https://floridastatefirecollege.org/public/pb_provider_app1.asp.

This form is incorporated by reference in subsection 69A-37.039(2), F.A.C, and can be obtained as specified in subsection 69A-37.039(1), F.A.C. Approval by the Bureau of Fire Standards and Training is required prior to the first day of the course.

a. Unless additional qualifications are required pursuant to sub-subparagraph (4)(b)3.c., for all courses listed under subparagraph (4)(b)1., qualified instructors are:

(I) Instructors with requisite faculty credentials for the academic institution that is registered in the Florida Department of Education Statewide Course Numbering System to teach the course, or

(II) Instructors with requisite faculty credentials as determined by the United States Fire Administration – National Fire Academy,

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| | <p>or</p> <p>(III) Instructors with requisite faculty credentials as determined by the respective regionally accredited or nationally accredited university or college as outlined in subsections 69A-37.084(5) and (6), F.A.C., or</p> <p>(IV) Instructors who hold an active Single Course Exemption Certification issued by the Division as outlined in subsection 69A-37.059(4), F.A.C., or</p> <p>(V) Instructors who hold an active Fire Investigator Certificate of Competency issued by the Division and an active Instructor III Certification issued by the Division, or</p> <p>(VI) Instructors who hold an active Fire Investigator II Certificate of Competency issued by the Division and an active Instructor III Certification issued by the Division (this instructor qualification expires on December 31, 2017).</p> <p>b. In regard to the courses “Fire Chemistry,” “Fire Origin and Cause,” “Fire Protection Systems,” and “Building Construction,” individuals who hold an active Fire Investigator I Certificate of Competency issued by the Division and an active Instructor III Certification issued by the Division shall be considered qualified instructors (this instructor qualification expires on December 31, 2017).</p> |
| <p><i>Student Learning Outcomes</i></p> | <p>After the successful completion of this course, the student will be able to do the following:</p> <ol style="list-style-type: none"> 1. Explain the history of building construction and its impact on the fire services including design features and the construction process. 2. Discuss the importance of fire resistance and its impact on building construction and classification types. 3. Describe various forces and loads placed upon buildings and how these affect structural components and systems. 4. Discuss various building systems for moving people and materials, HVAC systems, and smoke control systems and the electrical systems found in buildings and how they relate to firefighting activities. 5. Discuss building construction, interior finishes, and fire doors and their effect on fire behavior. |

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| | <p>6. Describe foundations and considerations when determining the type of foundation to include loads, surface materials, and settlement.</p> <p>7. Explain the considerations when using wood as a building component.</p> <p>8. Explain masonry products and how they are used in buildings.</p> <p>9. Describe properties of steel and where steel is used in building construction.</p> <p>10. Describe the characteristics of concrete and how it is used in building structures.</p> <p>11. Describe roofs and roof support systems and the materials used to construct them, and the impact on firefighting.</p> <p>12. Discuss special structures such as high rises, underground buildings, membrane structures, correctional facilities, and atriums and the concerns for firefighting and life safety.</p> <p>13. Discuss concerns related to buildings under construction, remodeling, expansion, and demolition.</p> <p>14. Discuss building collapse from forces of nature and building codes that can help minimize the effects of natures.</p> |
| Textbook used by BFST | <i>Building Construction Related to the Fire Service (4th ed)</i> ; IFSTA (2016) ISBN: 978-087939594-0 |
| Required Materials | Paper, Pens, Thumb drive, |
| Method of Instruction | Classroom unless otherwise approved by BFST |
| Grading | Passing 70% (Quizzes 30% Final 50% Presentations 20%) |
| Certification(s) | <p>One of five required courses for Fire Officer I certification</p> <p>FFP2120, BFST2120, BUILDING CONSTRUCTION FOR OR ATPC2120 THE FIRE SERVICE</p> <p>FFP2720 or BFST2720 COMPANY OFFICER or ATPC2720</p> <p>RN4807 COURAGE TO BE SAFE</p> <p>FFP1740 or BFST1740 FIRE SERVICE COURSE or ATPC1740 DELIVERY</p> <p>FFP1810 or BFST1810 FIREFIGHTING TACTICS AND or ATPC1810 STRATEGIES I</p> |

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| | <p>One of the five required courses for Firesafety Inspector I certification</p> <p>FFP1510, BFST1510, or ATPC1510 CODES AND STANDARD FFP2120, BFST2120, or ATPC1510 BUILDING CONSTRUCTION SERVICE</p> <p>FFP2521, BFST2521 or ATPC2521 CONSTRUCTION DOCUMENT REVIEW</p> <p>FFP1505, BFST1505 or ATPC1505 FIRE PREVENTION PRACTICE</p> <p>FFP1540, BFST1540 or ATPC1540 PRIVATE FIRE PROTECTION</p> |
| <i>Attendance Policy</i> | <p>You are required to attend all sessions of the course and complete all pre-course assignments. Failure to appear in class for a scheduled activity will be considered an absence unless you make arrangements with the instructor for a make-up session. Failure to make up missed sessions prior to the next session will result in an absence. Students are allowed to miss 10% of the class and still receive credit.</p> |
| <i>Academic Integrity</i> | <p>Academic integrity is crucial to the learning community and indicates respect for the college, the instructor, the course, your classmates and yourself. Any violation of this trust, including but not limited to cheating, plagiarism, collusion, or using or having any content of an un-administered test, will result in immediate dismissal from the course. Under Florida Statute 633, any student dismissed for academic dishonesty can be refused acceptance for any course administered by FSFC.</p> <p>Training Provider Message You must be certified by the State of Florida as an Instructor I, II, or III, or a State of Florida recognized Fire Department, or hold a certification as a Single Course Exemption Instructor. Applications can be made through the Bureau of Fire Standards and Training. Organization Providers are Schools, Government Entities, and Businesses that need to apply and be approved by the Florida State Fire College.</p> <p>Instructor Message An instructor providing training must be qualified by the Bureau of Fire Standards and Training or instructors with requisite faculty credentials for the academic institution that is registered in the Florida Department of Education Statewide Course Numbering System to teach the course or instructors with requisite</p> |

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| | <p>faculty credentials as determined by the United States Fire Administration-National Fire Academy or instructors with requisite faculty credentials as determined by the respective regionally accredited or nationally accredited university or college or instructors who hold an active Single Course Exemption Certification issued by the Division. Instructors who hold an active Fire Officer II Certification issued by the Division after November 18, 2013, and an active Instructor II Certification issued by the Division. Instructors who hold an active Firesafety Inspector I, Firesafety Inspector II or Fire Code Administrator Certification issued by the Division and an Instructor II Certification issued by the Division may teach the "Building Construction for the Fire Service."</p> <p>Pre-Certification Message To qualify for certification as a Fire Officer I, you shall possess an active Firefighter Certificate of Compliance issued by the Division or have met the curriculum requirements for Volunteer Firefighter I as defined in 69A-37.055(1) F.A.C., Meet the job performance requirements of NFPA 1021 - Fire Officer I (2009)., Complete the Fire Officer I curriculum., Complete the Fire Officer I Task Book with required signatures. The evaluator of the FO1 task book is a direct supervisor, training officer or person designated by the Fire Chief or Agency Head who is responsible for overseeing the performance or activity of the candidate. It is the candidate's responsibility to verify that the evaluator signs and enters their Florida Instructor ID number attesting to first hand observation of the requisite skills after they have observed the demonstration of the task book performance requirements, Pass the Fire Officer I exam with a score of 70% or higher., Complete the National Fallen Firefighters Foundation course titled "Courage to be Safe" or a course determined by the Division to be equivalent. When taking a state exam, please ensure that your personal profile matches the identification that you plan to produce at PearsonVue.</p> <p>To be certified as a Firesafety Inspector I in the State of Florida, an individual must; never have been</p> |
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| | <p>convicted of felony, successfully complete 200 hours of basic certification training for firesafety inspectors, or have received equivalent training in another state, and pass a state written examination. To apply for this certification, login as a student, click on Apply, select certification exam and follow the process to submission. Supporting documentation may be scanned and attached or faxed to 352-732-1374. When faxing, note "on-line application" on the fax along with a contact phone number. You will need to have your fingerprints digitally taken and submitted. Directions on how to do this are on the home page. NOTE*** WHEN YOU ARE APPROVED TO TEST OR IF ADDITIONAL INFORMATION IS REQUIRED, A MESSAGE WILL BE SENT TO YOUR INBOX. PLEASE CHECK YOUR INBOX ON A REGULAR BASIS.</p> <p>NFPA NFPA 1021 and 1031: FIRE OFFICER I and Subject FIRESAFETY INSPECTOR I and Level</p> |
| <i>Students with Disabilities</i> | Any student who has a permanent or temporary disability that may require a reasonable accommodation to participate in the course must present documentation of the disability and requested accommodation no later than the beginning of the course. |
| <i>Emergency Evacuation Policy</i> | <p>Emergency procedures for the institution or training facility should be followed.</p> <p>If on the Florida State Fire College campus, the occupants of the buildings on campus are required to evacuate and assemble outside when a fire alarm is activated or an announcement is made. Please be aware of the following policies regarding evacuation.</p> <ul style="list-style-type: none"> • Familiarize yourself with all exit doors of the classroom and the building. • Remember that the nearest exit door may not be the one you used when you entered the building. • If you require assistance to evacuate, inform the instructor on the first day of class. • In the event of an evacuation, follow the guidance of the instructor. • Do not re-enter a building unless you are given instructions by Florida State Fire College personnel to do so. |
| <i>Requesting Emergency Care</i> | Emergency procedures for the institution or training facility should be followed. |

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| | <p>If on the Florida State Fire College campus, any request for emergency care should be initiated by calling “911” from any phone on campus of the Florida State Fire College. Phones are located in each classroom. Additionally, in the event of any emergency, immediately contact an instructor or staff member.</p> |
| <p><i>Critical Event Procedures</i></p> | <p>Emergency procedures for the institution or training facility should be followed.</p> <p>If on the Florida State Fire College campus:</p> <p>Severe Weather – there is a lightning detection system on campus which has an audible 15 second blast of an air horn. If you are outside, please follow your instructor or move to the closest permanent building. Once the threat is over, there will be three 5 second blasts of the signal.</p> <p>Security – During the daytime, security is handled by full time faculty and staff. There are security guards on duty in the evenings and weekends. Please comply with the requests made of security officers. Failure to do so can result in removal from campus.</p> <p>Student Badges – You will be issued a badge to be worn anytime you are on campus.</p> |
| <p><i>Enabling Objectives</i></p> | <p>Given information from discussion and reading materials, the student will perform the following objectives to a written test accuracy of at least 70% and meet the applicable job performance requirements of NFPA 1021 (2009) and NFPA 1031 (2014).</p> <p><u>Chapter 1: Building Construction and the Fire Service</u></p> <ol style="list-style-type: none"> 1. Recognize how changes in building construction can influence firefighting operations. 2. Describe the building design and construction process from concept to renovation and remodeling. 3. Understand the safety hazards of PPE that are required on a construction site. 4. Identify laws and other regulation variables that affect building design. 5. Identify engineering variables that affect building design. 6. Identify economic variables that affect building design. 7. Identify other variables that affect building design. 8. Identify and describe the various types of licenses required by the state and regulated by DBPR for building construction and the role of such contractors/subcontractors. |

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| | <ol style="list-style-type: none"> 9. Understand the licensing requirements of FS 633,471, 481, 489, 468. 10. Understand the building construction requirements under FS 553. 11. Explain fire behavior principles as they apply to community fire defense. 12. Identify factors of structural failure caused by design. 13. Explain the role of preincident planning in building construction 14. Understand how hurricane windows affect ventilation. (FL Objective) 15. Understand the process for Florida inspectors to review permits for construction, renovation, etc. under the Florida Building Code permitting requirements and the FFPC permitting requirements. (FL Objective) 16. Identify Florida rules pertaining to the adoption of the Florida Building Code, and Florida Fire Prevention Code, and NFPA 101. (FL Objective) 17. Describe the Florida Accessibility Code for Building Construction. (FL Objective) 18. Describe the differences in scope and application between the Florida Building Code-Building, Florida Building Code – Residential and the Florida Existing Building Code. 19. Understand how the Florida Building Code core language is based on International Code Council with some modifications. 20. Explain who must conduct building inspections, what certifications must be held, and that the inspection must comply with NFPA 101 as well as witnessing fire system tests. (FL Objective) 21. Identify state requirements for record retention for fire departments. (FL Objective). 22. Describe the building construction and flow requirements for |
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occupancy changes.

FESHE Outcomes

1. Describe building construction as it relates to firefighter safety, buildings codes, fire prevention, code inspection, firefighting strategy, and tactics.
2. Classify major types of building construction in accordance with a local/model building code.
8. Identify the indicators of potential structural failure as they relate to firefighter safety.
9. Identify the role of GIS as it relates to building construction.

Chapter 2 Building Classifications and Structural Fire Resistance

1. Describe building classifications used in the fire service.
2. Explain the function of occupancy classifications.
3. Describe ways that fire and fuel load are determined.
4. Explain methods for determining fire resistance.

FESHE Outcomes

1. Describe building construction as it relates to firefighter safety, buildings codes, fire prevention, code inspection, firefighting strategy, and tactics.
2. Classify major types of building construction in accordance with a local/model building code.
3. Analyze the hazards and tactical considerations associated with the various types of building construction.
4. Explain the different loads and stresses that are placed on a building and their interrelationships.
6. Differentiate between fire resistance, flame spread, and describe the testing procedures used to establish ratings for each.
7. Classify occupancy designations of the building code.

Chapter 3 Structural Design Features of Buildings

1. Explain various forces, stresses, and loads exerted on the structural design features of a building.
2. Describe common load-bearing structural components.
3. Identify commonly encountered composite structural systems.
4. Identify Florida's criteria for designation as an approved

Nationally

Recognized Testing Laboratory. (FL Objective)

5. Recognize commonly used internet websites for most NRTL's. (FL Objective)
6. Identify Florida Building Code Section 721 as having procedures to determine fire resistance. (FL Objective)
7. Explain additional residential occupancies. (FL Objective)
8. Describe lightweight truss markings as covered in F.S. 663.222 and FAC 69A-60.0081. Discuss faults of the system as a potentially giving a false safe indicator limitations of the marking system with respect to bar joist, need for preincident planning and fireground assessment regardless of marking system (FL Objective).

FESHE Outcomes

1. Explain the different loads and stresses that are placed on a building and their relationships.
2. Identify the function of each principle structural component in typical building design.

Chapter 4: Building Systems

1. Describe the building system functions of stairs.
2. Describe mechanical conveyor systems used in buildings.
3. Describe the building system functions of elevators.
4. Identify types of vertical shafts and utility chases.
5. Explain various functions of building air handling systems.
6. Identify types of electrical equipment used for building systems.
7. Identify Florida Elevator Safety Law as found in F.S. Chapter 399. (FL Objective)
8. Identify the requirement for high rise residential buildings and elevator access according to FS 553.509(2). (FL Objective)

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9. Identify NFPA 82 Standard on incinerators and waste and linen handling systems. (FL Objective)
10. Identify NFPA 96 as Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations. (FL Objective)
11. Identify Florida requirements for gas stations to have emergency alternate power capability per F.S. 526.143. (FL Objective)

FESHE Outcomes

1. Describe building construction as it relates to firefighter safety, building codes, fire prevention, code inspection, firefighting strategy, and tactics.

Chapter 5 Interior Finishes and Passive Fire Protection

1. Describe how characteristics of interior finishes influence fire behavior.
2. Describe tests used for interior finishes.
3. Explain how ceilings can influence fire behavior.
4. Identify characteristics of fire walls and partitions.
5. Describe fire doors and how they limit fire damage.

FESHE Outcomes

1. Describe building construction as it relates to firefighter safety, buildings codes, fire prevention, code inspection, firefighting strategy, and tactics.
6. Differentiate between fire resistance, flame spread, and describe the testing procedures used to establish ratings for each.

Chapter 6: Foundations

1. Explain how soil properties influence building foundation types.
2. Identify types and components of building foundations.
3. Describe types of foundation walls.
4. Explain the symptoms and causes of building settlement.

5. Recognize uses of shoring and underpinning.

FESHE Outcomes

1. Describe building construction as it relates to firefighter safety, buildings codes, fire prevention, code inspection, firefighting strategy, and tactics.
4. Explain the different loads and stresses that are placed on a building and their interrelationships.
5. Identify the function of each principle structural component.
8. Identify the indicators of potential structural failure as they relate to firefighter safety.

Chapter 7: Wood Construction

1. Describe materials used in wood construction.
2. Recognize combustion properties of wood.
3. Describe ignition-resistant construction.
4. Recognize the importance of calculating structural endurance under fire conditions.
5. Describe various types of wood structural systems.
6. Identify forces that may undermine the structural integrity of wood construction.

FESHE Outcomes

1. Describe building construction as it relates to firefighter safety, buildings codes, fire prevention, code inspection, firefighting strategy, and tactics.
2. Classify major types of building construction in accordance with a local/model building code.
3. Analyze the hazards and tactical considerations associated with the various types of building construction.
4. Explain the different loads and stresses that are placed on a building and their interrelationships.
5. Identify the function of each principle structural component in typical building design.
8. Identify the indicators of potential structural failure as they relate to firefighter safety.

Chapter 8: Masonry and Ordinary Construction

1. Describe properties of masonry construction components.

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2. Explain how masonry structures are classified in building codes.
3. Describe features and functions of masonry structures.
4. Identify causes of structural failure of masonry construction.

FESHE Outcomes

1. Describe building construction as it relates to firefighter safety, buildings codes, fire prevention, code inspection, firefighting strategy, and tactics.
2. Classify major types of building construction in accordance with a local/model building code.
3. Analyze the hazards and tactical considerations associated with the various types of building construction.
4. Explain the different loads and stresses that are placed on a building and their interrelationships.
5. Identify the function of each principle structural component in typical building design.
8. Identify the indicators of potential structural failure as they relate to firefighter safety.

Chapter 9: Steel Construction

1. Describe the material properties of steel.
2. Describe methods used to protect steel construction building elements during a fire.
3. Explain how steel is used in the construction of structural framework.
4. Identify common reasons for collapse of steel structures.

FESHE Outcomes

1. Describe building construction as it relates to firefighter safety, buildings codes, fire prevention, code inspection, firefighting strategy, and tactics.
2. Classify major types of building construction in accordance with a local/model building code.
3. Analyze the hazards and tactical considerations associated with the various types of building construction.
5. Identify the function of each principle structural component in typical building design.
8. Identify the indicators of potential structural failure as they relate to firefighter safety.

Chapter 10: Concrete Construction

1. Identify material properties of concrete.
2. Differentiate between precast and cast-in-place concrete.
3. Determine factors that affect the finished quality of concrete.
4. Recognize factors that influence fire resistance in concrete construction.
5. Describe types of concrete framing systems.

FESHE Outcomes

1. Describe building construction as it relates to firefighter safety, buildings codes, fire prevention, code inspection, firefighting strategy, and tactics.
2. Classify major types of building construction in accordance with a local/model building code.
3. Analyze the hazards and tactical considerations associated with the various types of building construction.
5. Identify the function of each principle structural component in typical building design.
8. Identify the indicators of potential structural failure as they relate to firefighter safety.

Chapter 11: Roofs

1. Explain the role roofs play in structural firefighting.
2. Describe major architectural styles of roofs.
3. Identify types of roof support systems.
4. Describe the function of roof decks.
5. Identify materials used to construct roof decks.
6. Distinguish among types of roof coverings.
7. Identify types of green design roofs.
8. Recognize how roof openings can be used in firefighting operations.

FESHE Outcomes

1. Describe building construction as it relates to firefighter safety, buildings codes, fire prevention, code inspection, firefighting strategy, and tactics.
4. Explain the different loads and stresses that are placed on a building and their interrelationships.
5. Identify the function of each principle structural

component in typical building design.
8. Identify the indicators of potential structural failure as they relate to firefighter safety.

Chapter 12: Special Structures and Design Features

1. Describe the characteristics of high-rise buildings and their impact on firefighting tactics.
2. Explain the emergency use of elevators in high-rise buildings during a fire event.
3. Identify characteristics of limited or controlled access buildings.
4. Recognize characteristics of atriums.
5. Describe the characteristics of explosion venting in buildings.
6. Identify the need for areas of refuge within a structure.
7. Identify fire protection hazards that rack storage can create.

FESHE Outcomes

1. Describe building construction as it relates to firefighter safety, buildings codes, fire prevention, code inspection, firefighting strategy, and tactics.
5. Identify the function of each principle structural component in typical building design.
7. Classify occupancy designations of the building code.
8. Identify the indicators of potential structural failure as they relate to firefighter safety.

Chapter 13: Buildings Under Construction, Remodeling, Expansion, and Demolition

1. Describe conditions at construction sites that impact firefighting tactics.
2. Identify the methods of providing fire protection at construction sites.
3. Explain how structural changes and expansions may affect fire and life safety.
4. Describe demolition hazards as they relate to firefighting tactics.
5. Understand and apply the code provisions of the FFPC and NFPA 241 to buildings under construction

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including FD access and water supply.

FESHE Outcomes

1. Describe building construction as it relates to firefighter safety, buildings codes, fire prevention, code inspection, firefighting strategy, and tactics.
8. Identify the indicators of potential structural failure as they relate to firefighter safety.

Chapter 14: Non-Fire Building Collapse

1. Describe human-related causes of building collapse.
2. Distinguish among nature-related causes of building collapse.
3. Explain the importance of preincident planning for wide area incidents.

FESHE Outcomes

1. Describe building construction as it relates to firefighter safety, buildings codes, fire prevention, code inspection, firefighting strategy, and tactics.
4. Explain the different loads and stresses that are placed on a building and their interrelationships.
8. Identify the indicators of potential structural failure as they relate to firefighter safety.

Instruction Plan

This course is to equip Firefighters and Inspectors with a general knowledge of building construction to aid them in understanding how a building will react to fire and other disasters. Those on the building code side will find some differences in how buildings are classified and some of the terminology used when looking at buildings in relation to life safety.

There are three videos on pre-stressed and post-stressed concrete if you desire to show them in Chapter 10. Other videos are incorporated into the corresponding Chapters.

Day One:

- Orientation
- Introductions
- Waiver Forms signed
- Discussion of projects and groups formed
- Chapters 1 - 3

Chapter 1: Building Construction and the Fire Service

- 1) History of Building Construction
- 2) Design and Construction Process
- 3) Law-Based Construction Variables
- 4) Engineering-Based Construction Variables
- 5) Economics-Based Construction Variables
- 6) Other Variables
- 7) Community Fire Defense
- 8) Design-Caused Structural Failure
- 9) Preincident Planning in Building Construction

Chapter 2: Building Classifications and Structural Fire Resistance

- 1) Basic Building Classifications
- 2) Occupancy Classifications
- 3) Fire and Fuel Load
- 4) Fire Resistance

Chapter 3: Structural Design Features of Buildings

- 1) Forces, Stresses, and Loads
- 2) Structural Accommodations for Loads
- 3) Composite Structural Systems

Day Two:

- Quiz 1
- Chapters 4 thru 7

Chapter 4: Building Systems

- 1) Stairs

- 2) Mechanical Conveyor Systems
- 3) Elevators
- 4) Vertical Shafts and Utility Chases
- 5) Air Handling Systems
- 6) Electrical Equipment

Chapter 5: Interior Finishes and Passive Fire Protection

- 1) Interior Finishes
- 2) Testing Interior Finishes
- 3) Ceilings
- 4) Walls and Partitions
- 5) Fire Doors

Chapter 6: Foundations

- 1) Soil Properties
- 2) Types of Foundations
- 3) Foundation Walls
- 4) Building Settlement
- 5) Shoring and Underpinning

Chapter 7: Wood Construction

- 1) Material Properties of Wood and Manufactured Components
- 2) Wood Structural Systems
- 3) Structural Collapse of Wood Construction

Day Three:

Quiz 2

Chapters 8 thru 10

Chapter 8: Masonry and Ordinary Construction

- 1) Material Properties of Masonry Construction
- 2) Features and Functions of Masonry Structures
- 3) Structural Failure of Masonry Construction

Chapter 9: Steel Construction

- 1) Material Properties of Steel and Iron
- 2) Steel-Framed Structures
- 3) Collapse of Steel Structures

Chapter 10: Concrete Construction

- 1) Material Properties of Concrete
- 2) Concrete Framing Systems

Day Four:

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Quiz 3

Chapters 11 thru 14

Chapter 11: Roofs

- 1) Roofs and Fire Fighting
- 2) Architectural Style of Roofs
- 3) Roof Support Systems
- 4) Roof Decks
- 5) Roof Coverings
- 6) Green Roofs
- 7) Roof Openings

Chapter 12: Special Structures and Design Features

- 1) High-Rise Buildings
- 2) Limited or Controlled Access Buildings
- 3) Special Features within Buildings

Chapter 13: Buildings under Construction, Remodeling, Expansion, and Demolition

- 1) Tactical Problems
- 2) Structural changes and Expansion
- 3) Demolition of Buildings

Chapter 14: Building Collapse

- 1) Human-Related Causes of Building Collapse
- 2) Nature-Related Causes of Building Collapse
- 3) Wide Area Incidents

Day Five:

Complete lectures and Discussions if not done

Quiz 4

Projects

Final Exam

Graduation

Pre course Assignment

On July 17, 1981 a structural collapse occurred at the Hyatt Regency Hotel in Kansas City, Missouri. In the collapse 114 civilians were killed and more than 200 injured.

You are to research this collapse and answer the following questions. Bring this completed assignment to class the first day for a grade.

1. Was the original construction design adequate and what design change led to the collapse?
2. Who discovered the significant change in the design in the aftermath of the collapse?
3. In the aftermath of the collapse who was cited as responsible for the design flaw?

THE BUREAU OF FIRE STANDARDS & TRAINING

AT
The Florida State Fire College

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Friday Presentation: This is to be a group presentation with all members participating equally. It will be a PowerPoint assisted presentation and a copy will be archived for future learning.

Your group will choose a location in Ocala then develop a presentation that shows:

- Type of construction
- Occupancy
- Hazard levels (high, medium, low) & why
- Life safety levels (high, medium, low) & why
- Fire protection system
- Foreseeable problems
- What ifs based on your work position
 - May be mixed so base on consensus

Team Names: _____

Group Presentation Rubric

The teacher will use this rubric to evaluate each group's presentation. Students can look at this rubric so they may understand what they are being graded on. The Group Presentation Rubric will be combined with scores from the quizzes and final to determine your final grade.

| Trait | Criteria | | | | Points |
|---|---|---|--|---|--------|
| | 1 | 2 | 3 | 4 | |
| Content Did the presentation have valuable material? | Presentation contained little to no valuable material. | Presentation had moments where valuable material was present but as a whole content was lacking. | Presentation had a good amount of material and benefited the class. | Presentation had an exceptional amount of valuable material and was extremely beneficial to the class. | — |
| Collaboration Did everyone contribute to the presentation? Did everyone seem well versed in the material? | The teammates never worked from others' ideas. It seems as though only a few people worked on the presentation. | The teammates sometimes worked from others' ideas. However it seems as though certain people did not do as much work as others. | The teammates worked from others' ideas most of the time. And it seems like every did some work, but some people are carrying the presentation. | The teammates always worked from others' ideas. It was evident that all of the group members contributed equally to the presentation. | — |
| Organization Was the presentation well organized and easy to follow? | The presentation lacked organization and had little evidence of preparation. | There were minimal signs of organization or preparation. | The presentation had organizing ideas but could have been much stronger with better preparation. | The presentation was well organized, well prepared and easy to follow. | — |
| Presentation Did the presenters speak clearly? Did the engage the audience? Was it obvious the material had been rehearsed? | Presenters were unconfident and demonstrated little evidence of planning prior to presentation. | Presenters were not consistent with the level of confidence/preparedness they showed the classroom but had some strong moments. | Presenters were occasionally confident with their presentation however the presentation was not as engaging as it could have been for the class. | Presenters were all very confident in delivery and they did an excellent job of engaging the class. Preparation is very evident. | — |

Total Points _____